2015 APCBEES PHUKET CONFERENCE ABSTRACT

December 25-26, 2015
Phuket, Thailand
CAPE PANWA HOTEL, PHUKET

Session 3

Tips: The schedule for each presentation is for reference only. In case of missing your presentation, we strongly suggest that you attend the whole session.

Afternoon, December 26, 2015 (Saturday)

Time: 15:40~17:50

Venue: Tamarind II

Session 3: 13 presentations-Topic: "Environment & Energy"

Session Chair: Prof. Orawan Siriratpiriya

E0001 Presentation 1 (15:40~15:50)

Risk Assessment of Cutaneous Leishmaniasis Using GIS in an Endemic Area, Central Iran

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Abstract—Cutaneous leishmaniasis (CL) is one of the 10 infectious diseases priorities in the world, and the first in the case of morbidity in Iran. Current study was conducted to assess the risk of CL and to study some epidemiological aspects of the disease in Central Iran. This study was conducted during 2013-14 in Qom Province. Different data layers, including spatial distribution of vector, reservoir, and human cases, environmental and climatologically variables which seem to affect on CL transmission were prepared and stored in a spatial database created in ArcGIS. MaxEnt 3.3.3 model was used to determine the suitable ecological niches for main vector and reservoir at the province level. Finally, spatial analysis and clustering methods were applied in ArcGIS to find hot spots and susceptible areas for establishing new foci of the disease. During 2009-13 a total of 1767 CL cases were recorded in the study area. From these cases, 979 were living in urban areas and the remaining in rural areas. Most of recorded human cases in Qom city had a history of travel to the endemic areas of CL within the province or to the endemic areas of the disease in Iran. Spatial distribution of CL cases across the province showed north-eastern and south-western quarters of Qom city were hot spots of the disease ($P<0.05$), while hot spots of the province (excluding Qom city) gradually become closer to Qom city during 2009 to 2013. *Phlebotomus papatasi* and *Meriones libycus* were found to be the vector and reservoir of CL in the study area. Overlaying probability of presence layers for both vector and reservoir on the risk of CL

incidence resulted to find high risk areas in the province. Hot spot and risk analysis across the province showed more than 40 villages are locating in the areas with high and very high levels of risk in the case of CL transmission. Due to existing few cases without any travel history as well as finding hot spots ($P<0.05$) of CL in some quarters of Qom city, the disease seems to be transmitted in the city as well. Therefore, it is necessary to do a comprehensive study on CL in hot spots to clear the situation of CL in Qom city. Priority should be given to prevention and control programs in hot spot areas.